

## **APPENDIX B**

### **Drawings**

**Drawing Nos. 33-100-3380 through 33-100-3384**

**Drawing Nos. 40-D-7022 and 40-D-7023**



GENERAL GEOLOGIC LEGEND


GENERAL GEOLOGIC EXPLANATION

GENERAL GEOLOGIC NOTES

Quaternary Units	
Qe	Quaternary Loess Deposits (Qe). Deposits of Holocene age wind-blown loess blanket the site. The loess consists primarily of brown, dry to moist, non-plastic silt and fine sand.
Qh	Quaternary Alluvium Deposits (Qh). The alluvium deposits consist of undifferentiated medium to coarse-grained sand with fines, gravel, cobbles and boulders composed of basaltic detritus from local sources.
Landslide. Landslide debris of unknown age and composition, includes deposits on the northwest and east slopes of Horsethief Mountain, and Horsethief Point.	
Tertiary Units	
Tr	Ringold Formation (Tr). The Ringold is a fluvioaustrine deposit composed of a poorly to well-indurated, subrounded basalt sand, gravel and cobble size clasts in a matrix of fines and silty sand.
Ellensburg Formation.	
Tem	Elephant Mountain Member (Tem). The Elephant Mountain member consists of medium to fine grained basalt. The member was not encountered in test borings at the alternate dam site, but was logged in drill holes the original dam site, refer to WIS (2003) for detailed description.
Trr	Rattlesnake Ridge Member (Trr). The Rattlesnake Ridge member also includes the sedimentary deposits between the Elephant Mountain Basalt and the Pomona Basalt. The unit is composed of fluvial gravel, sand, and cobbles with intensely weathered basalt fragments and tuffaceous silt and clay.
Columbia River Basalt Group – Saddle Mountains Basalt Formation.	
Tp	Pomona Member (Tp). The Pomona member underlies the valley and the north abutment at the damsite, the basalt has reverse magnetic polarity, is generally black to gray, fine grained, slightly weathered, hard and intensely to moderately fractured, dense basalt with fine plagioclase crystals. The Pomona flow is invasive into the underlying Selah interbed, the upper portion of the flow includes glassy vesicular basalt with inclusions of fine sediment, which is referred to as a peperite.
Ellensburg Formation.	
Ts	Selah Sedimentary Interbed (Ts). The Selah Interbed is a sedimentary unit composed of tuffaceous siltstone and claystone. The Selah sediments are reddish orange to black, well indurated clay to medium sand –sized lithic fragments composed of pumice, ash and chert.
Columbia River Basalt Group – Saddle Mountains Basalt Formation.	
Teq/Tum	Esquatzel and Umatilla Members (Teq/Tum). The Esquatzel member is an intercanyon flow that filled ancestral Columbia River channels, sometimes overflowing the channel and pouring out into the floodplain.The Esquatzel member overlies the Umatilla member, and it is difficult to distinguish between the two flows, due to similar characteristics the two members are addressed as a single unit. The flows consist of grey to dark grey, fresh to slightly weathered, hard, moderately to slightly fractured, dense to slightly vesicular, fine-grained basalt. Both basalt have normal magnetic polarity.
Ellensburg Formation.	
Tm	Mabton Sedimentary Interbed (Tm). The Mabton Interbed is a thick sequence of light green to brown, moderately soft tuffaceous siltstone, sandstone and claystone. The Mabton sediments are light green to dark brown, well indurated, intensely weathered clay silt and sand-size fragments. Traces of black charcoal fragments noted. The interbed represents an extended time period of deposition between eruptions.
Columbia River Basalt Group – Wanapum Basalt Formation	
Tpr	Priest Rapids Basalt Member (Tpr). The Priest Rapids Member is distinguished by its coarse-grained texture and reverse magnetic polarity. The flows consist of black to dark grey, slightly weathered, hard, intensely to moderately fractured, fine-grained to porphyritic vesicular basalt.

DH-03-5	●	Drill hole location, designation and number.
A	↑	Location and designation of geologic section.
A'	↑	
— — ?.....		Geologic contact. Dashed where approximate, queried where inferred, dotted where concealed.
↘ ↘ ↘		Thrust Fault, dashed where approximate, arrows toward direction of footwall movement.
↔ ↕ ↔		Anticline, dashed where approximate.
Macho Linear	—	Photographic Linear, dashed where approximate.
— ● — w —		Overhead power line.
DH-03-5 EL 1285.5 Proj 81' N	⋮	Drill hole designation. Elevation of ground surface at collar of drill hole. Distance and direction of projection (if projected).
32.5	⋮	Stick log of drill hole. Dashed when projected more than ten feet to the section.
Tr	⋮	Depth to geologic contact.
106.5	⋮	Geologic unit.
	⋮	Total depth of drill hole.

1. The Unified Soil Classification System, Designation USBR 5005-86, "Procedure for Determining Unified Soil Classification (Visual Method)"; Designation USBR 5000-86, Procedure for Determining Unified Soil Classification (Laboratory Method)" were used in describing earth materials sampled in exploratory drill holes.
2. Descriptive terms appearing on geologic logs describe the physical characteristics of materials and conform to standard definitions as given in "Engineering Geology Field Manual, Volume I, 2nd Edition" (USBR, 1998) and "Volume II, 2nd Edition" (USBR, 2001).
3. General Geologic Explanation, Legend and Notes to accompany dwgs: 33-100-3381 through -3384.

 ALWAYS THINK SAFETY	
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION YAKIMA RIVER BASIN WATER STORAGE FEASIBILITY STUDY – WASHINGTON	
BLACK ROCK DAMSITE GENERAL GEOLOGIC LEGEND, EXPLANATION AND NOTES	
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SHEET 1 OF 1	
33-100-3380	